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A Study to Assess the Effectiveness of a Video-Assisted Teaching Program on Knowledge of Peripheral Vascular Disease (Varicose Vein) Prevention Among Working Women in Indore, India

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Abstract
Peripheral vascular disease (PVD), particularly varicose veins, affects millions globally, with significant implications for working women due to prolonged standing. This study evaluated the effectiveness of a Video-Assisted Teaching Program (VATP) in enhancing knowledge of PVD prevention among working women in the west zone of Indore, Madhya Pradesh, India, during 2017–2018. A pre-experimental one-group pre-test and post-test design was employed with 60 women aged 21–40 years, selected via simple random sampling (lottery method). Data were collected using a demographic proforma and a 30-item knowledge questionnaire (reliability: $r = 0.8$, split-half method). The VATP was the independent variable, and knowledge scores were the dependent variable. Results showed a significant increase in mean knowledge scores from 14.38 (SD ± 4.92) pre-test to 23.6 (SD ± 3.65) post-test ($t59 = 8.53$, $p \leq 0.001$). Pre-test scores showed greater dispersion than post-test scores, indicating improved consistency post-intervention. No significant associations were found between pre-test scores and demographic variables. The findings confirm the VATP's effectiveness in improving knowledge, supporting its use in occupational health education.

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I. Introduction

Peripheral vascular disease (PVD), particularly varicose veins, affects peripheral venous circulation, leading to disfigurement, ulcerations, skin changes, and severe bleeding post- trauma [1]. In India, approximately 9 million individuals are affected, as reported by the Save India Campaign, though the true prevalence may be higher due to underreporting compared to Western populations. Working women with prolonged standing jobs are at increased risk, necessitating targeted education to promote preventive lifestyle changes.

1.1 Objectives

1. To assess pre-existing knowledge of PVD (varicose vein) prevention among working women.
2. To evaluate the effectiveness of a Video-Assisted Teaching Program (VATP) on knowledge of PVD prevention.
3. To examine associations between pre-test knowledge scores and demographic vari- ables (age, academic qualification, occupational category, standing hours, work experience).

1.2 Statement of the Problem

1. What is the effectiveness of a VATP in improving knowledge of PVD prevention among working women in the west zone of Indore, Madhya Pradesh, in 2017–2018?
2. To what extent does knowledge of PVD prevention increase among working women following the VATP?

1.3 Hypotheses

- Null Hypothesis (H0): There is no significant difference between mean pre-test and post-test knowledge scores after the VATP.
- Research Hypothesis (H1): There is a significant difference between mean pre-test and post-test

knowledge scores following the VATP.

II. Materials and Methods

2.1 Study Design
A pre-experimental one-group pre-test and post-test design was used to evaluate the VATP's effectiveness.

2.2 Participants and Sampling
The study included 60 working women aged 21–40 years from the west zone of Indore, Madhya Pradesh, during 2017–2018. Participants were selected using simple random sampling via the lottery method, with purposive sampling to ensure inclusion of women with prolonged standing jobs.

2.3 Data Collection Tools
2.3.1 Demographic Proforma: Included age, academic qualification, occupational cate- gory, daily standing hours, and work experience.
2.3.2 Knowledge Questionnaire: A 30-item objective questionnaire on varicose vein pre- vention, with reliability established at $r = 0.8$ using the split-half method and Karl Pearson's correlation coefficient.
2.3.3 Video-Assisted Teaching Program (VATP): A structured educational intervention focused on PVD prevention.

2.4 Intervention
The VATP, the independent variable, was administered after the pre-test. Knowledge scores, the depnt variable, were measured using the questionnaire.

2.5 Statistical Analysis
Data were analyzed using SPSS version 26. Descriptive statistics (means, standard devi- ations, frequencies) summarized knowledge scores and demographic characteristics. In- ferential statistics included paired *t*-tests to compare pre- and post-test scores, chi-square tests, binary logistic regression, and ANOVA to assess associations with demographic variables. The significance level was set at $p < 0.05$.

III.Results

3.1 Sample Characteristics
Table 1 presents the demographic profile of the participants.

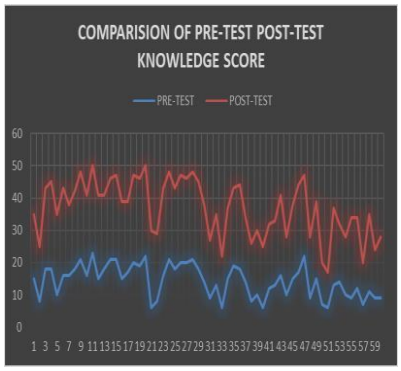
Table 1: Sample Characteristics of Working Women ($n = 60$) Variable

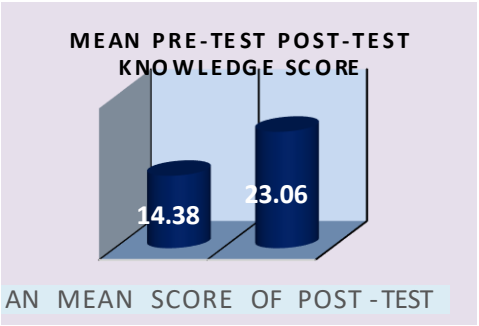
Variable	Result
Average Age	42–43 years
Academic Qualification	Graduate: 46.66%
Category of Working Women	Health Worker: 45%
Duration of Standing Hours per Day	6 hours: 43%
Work Experience	Under 5 years: 38%

3.2Knowledge Scores
The mean post-test knowledge score (23.6, SD ± 3.65) was significantly higher than the pre-test score (14.38, SD ± 4.92). The dispersion of pre-test scores was greater than post- test scores, indicating improved consistency post-intervention. A paired *t*-test confirmed a significant difference ($t59 = 8.53$, $p \leq 0.001$), rejecting H0 and supporting H1.
Table 2 shows the distribution of pre- and post-test knowledge scores.

Table 2: Pre-Test and Post-Test Knowledge Scores on Varicose Vein Prevention ($n = 60$, Maximum Score = 30)

Score Range Post-Test	Grading	Pre-Test		
		Frequency	Percentage	Frequency
Percentage				
21–30	Very Good	8	13.33%	41
68.33%				
11–20	Good	34	56.66%	19
31.66%				
1–10	Fair	18	30.00%	0
0.00%				





3.3 Associations with Demographic Variables

No significant associations were found between pre-test knowledge scores and demo- graphic variables (age, academic qualification, occupational category, standing hours, or work experience) using chi-square tests and ANOVA ($p > 0.05$).

IV. Discussion

The significant increase in knowledge scores post-VATP demonstrates its effectiveness in enhancing awareness of PVD prevention. The shift from 13.33% of participants scoring "Very Good" (21–30) pre-test to 68.33% post-test highlights the intervention's impact. The reduced dispersion in post-test scores suggests standardized knowledge levels post- intervention. The lack of association between demographic variables and pre-test scores indicates uniformly low baseline knowledge, emphasizing the need for targeted education. These findings align with studies on video-based health education [2]. Limitations include the absence of a control group and the specific demographic focus, which may limit generalizability. Future research should explore long-term behavioral changes and include diverse populations.

V. Conclusion

The VATP significantly improved working women's knowledge of PVD prevention in In- dore, supporting its integration into occupational health programs. Enhanced awareness can empower women to adopt preventive measures, potentially reducing PVD incidence.

VI. Recommendations

1. Implement VATP in workplace health programs to enhance PVD prevention knowl- edge.
2. Conduct longitudinal studies to assess the practical impact of increased knowledge on behavior.
3. Expand awareness campaigns for varicose vein prevention among working women.

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Conflicts of Interest

None declared.

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